



FACILITIES MANAGEMENT CENTRAL TECHNICAL SERVICES

SUPPLY, INSTALLATION AND COMMISSIONING OF 400KVA (AKANANI RESIDENCE) AND 500KVA (ROBIN CREST RESIDENCE) GENERATORS

LOCATION: DFC CAMPUS RESIDENCES

Technical Specification for 400KVA AND 500KVA Generator Installation

Technical Standards

The following standards are particularly relevant to the scope of works. This is not a fully comprehensive listing of all relative standards and normative references but rather a list of the more notable standards.

SANS 1213	Mechanical cable glands
SANS 1411	Materials of insulated electric cables and flexible cords
SANS 1507	Electric cables with extruded solid dielectric insulation for fixed installations (300/500 V to 1 900/3 300 V)
SANS 10199	The design and installation of earth electrodes
SANS 10225	The design and construction of lighting masts
SANS 10142-1	Wiring of Premises Part 1: Low Voltage Installations
SANS 60614-2	Conduits for electrical installations - Particular specification for conduits
IEC 50086	Conduit systems for cable management

1. Installation of 400KVA Generator for DFC Akanani Residence

The currently installed generator is not big enough to feed the entire residence. A bigger size is then required which will supply the entire building.

Scope of Work

- Installation of 400kVA generator replacing the existing 100KVA. The generator infrastructure must be complete with the following:
 - 400KVA diesel engine/alternator

- Integrated fuel tank of +/- 350L, reinforced mild steel tank, complete with fuel level sensor/gauge, lockable fuel cap, fuel fittings.
 - All Weatherproof, mild steel, powder coated with sound attenuated inlet and outlet louver boxes.
 - Power cables and control cables as stipulated on the BOQ.
 - Residential silencer exhaust system.
 - ATS panel with smart gen/equivalent.
 - Batteries.
 - Service and Maintenance x 3 in 12 months
 - 1 year warranty on engine.
 - Commissioning including electrical COC.
- All other electrical equipment, materials and work not explicitly mentioned but nevertheless required to fulfil the following minimum requirements shall be deemed to be included in the scope of supply with no additional cost and time implication:
 1. Achieving the plant process requirements.
 2. To meet equipment and personnel safety.
 3. To meet the requirements of statutory approving authorities.
 4. To coordinate with other contractors and agencies involved at site for other activities and site work.

2. Supply, Installation and Commissioning of 500KVA Generator for Robin Crest Residence

The 500KVA generator will replace the existing 150KVA currently installed at the residence.

Scope of Work

- Installation of 500kVA generator. The generator infrastructure must be complete with the following:
 - 500KVA diesel engine, 3 phase & neutral, silent weather resistant closure, ATS panel, integrated diesel tank etc.
 - Armored powered cables and control cables as per BOQ.
 - Bare copper earth cables as per BOQ
 - Cable accessories and consumables.
 - Digging cable trench.
 - Construction of a concrete plinth to place the generator (Generator stand)
 - Commissioning including electrical COC.
- All other electrical equipment, materials and work not explicitly mentioned but nevertheless required to fulfil the following minimum requirements shall be deemed to be included in the scope of supply with no additional cost and time implication:
 1. Achieving the plant process requirements.
 2. To meet equipment and personnel safety.
 3. To meet the requirements of statutory approving authorities.
 4. To coordinate with other contractors and agencies involved at site for other activities and site work.

Supply and Installation of 400KVA Generator for Akanani Residence Bill of Quantities:



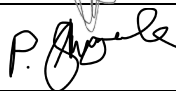
University of Johannesburg				
SCHEDULE OF QUANTITIES				
	Unit	Qty	Rate	Amount
Bill No. 1				
Disconnection and Removal of existing 100KVA generator to DFC Main Campus, distance is 8KM, crane truck to be included	No	1		
Supply, Installation, shop testing, site testing, of 400kVA generator. Engine / Alternator: 400kVA Canopy Type: Silent Weather resistant closure Noise Rating: Silent Fuel Tank: +/-350L ATS Panel: Smart gen/equivalent Standby: 450KVA Prime Power: 400KVA Voltage: 400V Rated Frequency: 50Hz. Power Factor: 0.8	No	1		
Supply Armoured cable 150 mm sq. 4 core SWC	m	64		
Construction of Gen Plinth	Ea.	1		
Supply Bare copper earth 70 mm sq.	m	10		
Sundries	Ea.	Lot		
Safety File	Ea.	1		
Service and maintenance as per OEM recommendation, three times a year	No	3		
Testing, commissioning, and COC	No	1		
Total Electrical Installation (Excluding VAT)				

Supply and Installation of a 500KVA Generator for Robin Crest Bill of Quantities:

University of Johannesburg				
SCHEDULE OF QUANTITIES				
	Unit	Qty	Rate	Amount
Bill No. 2				
Disconnection and Removal of existing 150KVA generator to DFC Main Campus, distance is 8KM, crane truck to be included	No	1		

Supply, Installation, shop testing, site testing, of 500kVA generator. Engine / Alternator: 500kVA Canopy Type: Silent Weather resistant closure Noise Rating: Silent Fuel Tank: +/-700L Fuel Consumption: @75% Load: 97 l/h ATS Panel: Smart gen/equivalent Prime Power: 500KVA Standby Power: 550KVA Voltage: 400V Rated Frequency: 50Hz. Power Factor: 0.8	No	1		
Supply Armoured cable 150 mm sq. 4 core SWC	m	80		
Supply Bare copper earth 70 mm sq.	m	37		
Excavation (0,5 meters deep and 0,3 meters wide)	m	15		
Labour to do installation	No	1		
Construction of a concrete Plinth (Generator stand)	No	1		
Service and maintenance as per OEM recommendation, three times a year	No	3		
Testing, commissioning, and COC	No	1		
Total Electrical Installation (Excluding VAT)				

As applicable and in accordance with the signature mandate:

Role	Name	Signature	Date
Project Manager: Central Technical Services	Mbambaleli Masala		27 July 2023
Technical Manager Electrical: DFC Campus	Nedohe, Tovhowani		27 July 2023
Maintenance Manager: DFC Campus	Tlhagale, Peter Sparks		27 July 2023